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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/980,830	03/25/2002	Luca Giacomini	3-291 USA	8792

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EXAMINER	
JONES, JUDSON	
ART UNIT	PAPER NUMBER
2834	

DATE MAILED: 06/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/980,830	GIACOMINI, LUCA	
	Examiner	Art Unit	
	Judson H Jones	2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-9 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-3 and 7-9 is/are rejected.

7)☒ Claim(s) 4-6 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Malinski et al. 4,616,528 A in view of Keller 6,276,664 B1, Bigelow et al. 2,978,219 A and Innes et al. 5,444,309 A. Malinski et al. discloses an actuator including a driving motor (see column 3 lines 24-27) with a planetary unit (see column 3 lines 36-58) and a worm unit (see column 3 lines 59-61) combined with mechanical coupling means to drive a valve (see column 3 lines 47-50). In regard to the claimed high reduction ratios, see Malinski et al. column 3 lines 10-13 where a range of reduction ratios is recited. Malinski et al. does not disclose a mechanical clutch element, a spring loaded shutter, an electronic control card or a miniaturized D.C. motor. Keller teaches in column 1 lines 29-33 that a low wattage motor (i.e., a small or miniature motor) can be used with high reduction ratio gear train to control the flow of air and also teaches in column 1 lines 54-58 using a spring to load a valve mechanism (i.e., a shutter). Since Keller and Malinski et al. are from the same field of endeavor it would have been obvious at the time the invention was made for one of ordinary skill in the art to have utilized a miniature motor combined with a high reduction ratio gear train for opening and closing valves in order to reduce the cost and to improve the reliability of the apparatus. Since Keller and Malinski et al. are from the same field of endeavor it also would have been obvious to utilize a return spring for a valve to close the

valve in case of power failure in order to protect the system from damage. Bigelow et al. teaches placing a fluid coupling (i.e., a clutch) between a motor and a speed reducer in order to protect the motor from damage from overloading. Since Bigelow et al. and Malinski et al. as modified by Keller are from the same field of endeavor it would have been obvious at the time the invention was made for one of ordinary skill in the art to have utilized a clutch in the actuator apparatus in order to protect the motor from overload and burn-out. Innes et al. teaches using a programmable logic controller to control valves in column 1 lines 16-24 in order to improve the control of the valves. Since Innes et al. and Malinski et al. as modified by Keller and Bigelow et al. are from the same field of endeavor it would have been obvious at the time the invention was made for one of ordinary skill in the art to have utilized a programmable logic controller to control the valves in the actuator apparatus in order to manage the opening and closing of valves faster and more reliably.

In regard to claim 2, see Keller column 1 lines 46 to 54. While Keller does not teach a particular size of D.C. motor, Keller teaches that the gear reduction ratio is inversely related to the necessary motor size. By increasing the gear reduction ratio, the size of the motor can be reduced to the claimed values.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Malinski et al. as modified by Keller, Bigelow et al. and Innes et al. as applied to claim 1 above, and further in view of Klueting 4,641,887 A and Savoyard 6,053,834 A. Malinski et al. as modified by Keller, Bigelow et al. and Innes et al. discloses the actuator apparatus but does not disclose the planetary reducing unit having a reduction ratio greater than 1000 or one ring gear having one tooth less than the other ring gear. Klueting teaches in column 2 lines 32-43 varying gear sizes to increase

the reduction ratio and specifically mentions ring gears being one tooth apart in lines 38-43. Since Klueting and Malinski et al. as modified by Keller, Bigelow et al. and Innes et al. are from the same field of endeavor it would have been obvious at the time the invention was made for one of ordinary skill in the art to have utilized ring gears being one tooth apart in order to increase the gear ratio of the planetary gear system. Klueting teaches a reduction ratio of 56:1 in line 43. Keller teaches a reduction ratio of 76 to 1 in column 4 line 53. Both reduction ratios are much smaller than 1000 to 1. Savoyard et al. teaches in the entire specification and in particular, column 5 lines 39-49, that the gear ratio of a planetary gear set can be varied by holding parts of the system immobile and/or applying power to or taking power from various elements of the system. Since Savoyard et al. and Malinski et al. as modified by Keller, Bigelow et al., Innes et al. and Klueting are from the same field of endeavor it would have been obvious at the time the invention was made for one of ordinary skill in the art to have increased the reduction ratio as taught by Savoyard in order to further reduce the size of the motor needed for moving a valve.

Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Malinski et al. as modified by Keller, Bigelow et al. and Innes et al. as applied to claim 1 above, and further in view of Stammes et al. 5,223,822 A. Malinski et al. as modified by Keller, Bigelow et al. and Innes et al. discloses the actuator apparatus but does not disclose a covering cap for an actuator. Stommes et al. teaches using a cover 26 for a valve actuator in column 6 lines 43-52 for the purpose of protecting the valve actuator from dirt and for allowing a visual confirmation of the position of the valve. Since Stommes and Malinski et al. as modified by Keller, Bigelow et al. and Innes et al. are from the same field of endeavor it would have been obvious at the time the invention was made for one of ordinary skill in the art to have utilized a transparent cover and a

signaling element in order to protect the actuator from dirt and to provide a visual confirmation of the position of the valve so that an operator can see if the apparatus is operating properly.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Malinski et al. as modified by Keller, Bigelow et al. and Innes et al. as applied to claim 1 above, and further in view of Kulidchenko et al. Malinski et al. as modified by Keller, Bigelow et al. and Innes et al. discloses the valve actuator but does not disclose a plurality of different adapters for coupling to a valve or the like. Kulischenko et al. teaches in figures 2-4 and in column 3 lines 8-21 that adapters can be used for coupling to different valves. Since Kulischenko et al. and Malinski et al. as modified by Keller, Bigelow et al. and Innes et al. are from the same field of endeavor it would have been obvious at the time the invention was made for one of ordinary skill in the art to have utilized a plurality of adapters to allow the actuator to be coupled to a plurality of different valves, thus increasing the usefulness of the motor by allowing it to be used in more situations.

Allowable Subject Matter

Claims 4-6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The prior art of record does not disclose or teach a reducing unit having a "second gear wheel or pinion having an inside threaded sleeve" in combination with the other features of claim 4. The prior art of record does not disclose or teach a shutter comprising a support framework including

a middle support supporting said clutch and second reducing unit, a support base coupled to the middle support and a cage element having legs for protecting said motor as recited in claim 6.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Judson H Jones whose telephone number is 703-308-0115. The examiner can normally be reached on 8-4:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on 703-308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3431 for regular communications and 703-305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

JHJ
May 24, 2003